Space Weather Forecast

Issued on Monday, 30 October 2023 at 00:20 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of G1/Minor Storms on day 1 (30 Oct). Risk decreasing thereafter.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low, with a series of common class flares from a complex region in the southeast quadrant. There are two further small and relatively stable regions on the visible disc. No Earth-directed CMEs have been observed.
Solar Wind / Geomagnetic Activity: Solar wind speeds have remained at elevated levels. Total magnetic field strength was at weak levels with the north-south component also generally varying weakly. Geomagnetic activity has been generally Unsettled to Active, with two G1/Minor storm intervals.
Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low solar activity is expected, mainly from AR3474. There is a slight chance of Moderate class flares.
Solar Wind / Geomagnetic Activity: There are no Earth directed CMEs. A fast solar wind is currently connected to the Earth, giving solar wind speeds of 550-600 km/s. Speeds are expected to begin declining through the period. Unsettled to Active activity is expected 30 Oct with a chance of an isolated G1/Minor storm interval. Activity then easing through the period, with a slight chance of G1/Minor storms on 31 Oct, gradually reaching Quiet with isolated Unsettled intervals by 01 Nov.
Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	Yes	30	20	10	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	10	15	25
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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